REMARKS

At present, applicants' claims 1-6 stand rejected under 35 U.S.C. § 103 based upon the patent to Aoki et al. (U.S. Patent No. 6,2[illegible],911) in view of the patent to Sasaki (U.S. Patent No. 5,329,422).

It is a fundamental tenet of all rejections under 35 U.S.C. § 103 that all of the recited elements in an applicant's claim must be found within the cited documents. In the present case, it is to be particularly noted that applicants' first claimed element recites a printed circuit <u>board</u> which has an electrical connector "disposed along one edge thereof." While Aoki et al. appear to teach that printed circuit <u>cards</u> may have edge connectors, nowhere in any of the art cited by the Examiner is it taught, disclosed or suggested that a printed circuit <u>board</u> has such a structure. Furthermore, there are no teachings, disclosures or suggestions in the art cited that would indicate to one of ordinary skill in the art that such an edge connector would be useful or even desirable in a printed circuit <u>board</u> assembly. Clearly, the reasons for this is that none of the art cited by the Examiner appreciates the problems solved by applicant's claimed design. In particular, it is noted that the art cited does not appreciate the <u>difficulties associated with plugging an entire circuit board assembly into an electrical socket</u>. The problems associated with plugging a fully populated circuit board are orders of magnitude greater than those associated with plugging individual printed circuit cards. Because of the larger number of electrical connections that have to be engaged, the insertion forces have to be much larger. Accordingly, one therefore also finds recited in applicants' claim 1 and the claims which depend therefrom, recitations directed to a stiffener.

Again, as pointed out above, it is a fundamental tenet of every rejection under 35 U.S.C. § 103 that all claim elements are to be found in at least one of the cited documents. In this case, in addition to the lack of an electrical connector disposed along an edge of a printed circuit board, there is also absent from the cited art any recitations directed to the inclusion of a stiffener which is disposed on the printed circuit board and which is also substantially coextensive with the printed circuit board. For these reasons alone, it is seen that the rejection under 35 U.S.C. § 103 cannot be sustained.

Furthermore, a close examination of the Examiner's argument indicates that the Examiner is merely picking and choosing those cited portions of the subject patents as a basis for his rejection. This is impermissible under 35 U.S.C. § 103. This statute and its judicially mandated interpretation requires that all of the teachings found within the four corners of a cited document be considered for all that the document teaches. With specific reference to the patent to Sasaki, it is noted that that patent does not include any reference to a nonconductive base nor does it include any reference to a base which is substantially coextensive with a printed circuit board. Rather, it is clearly seen on its face that Sasaki is directed to configurations for notebook personal computers. In particular, the elements of Sasaki to which the Examiner refers are the nonconductive piece that surrounds the circuitry of a laptop or notebook personal computer. As such, it is seen that those of ordinary skill in the art following the teachings of Sasaki would be led to surround the internal electrical components with a nonconductive case. This is significantly different than providing a nonconductive base which is substantially coextensive with a printed circuit board. Rather, it is seen that those of ordinary skill in the art following the teachings of Sasaki would deploy a nonconductive case around a printed circuit board (assuming,

purely for the sake of argument that a printed circuit board is something which can be equated to a printed circuit card, which it cannot). Once one surrounds a printed circuit board with a nonconductive case, any edge connectors that it possesses would be unavailable for making electrical contact with anything. Accordingly, those of ordinary skill in the art that would attempt to deploy the nonconductive case of Sasaki around applicants' circuit board would render it ineffective for the purposes of insertion and removal. Accordingly, it is seen that if one follows the teachings of Sasaki, particularly as suggested by the Examiner, one creates a structure which is incapable of performing the operations recited in applicant's specification. In short, the teachings of Sasaki, as applied by the Examiner, destroy the purpose for which applicants' circuit board assembly is designed.

The Examiner asserts that a rejection under 35 U.S.C. § 103 cannot be attacked by individual attacks on the cited references. This is clearly not the case. When a reference contains teachings that are contrary to that which is claimed, as in the case of Sasaki, it cannot be combined with any other documents to establish a basis for claim rejection. Furthermore, individual references can in fact be attacked by virtue of the fact that there must be some motivation for the combination allegedly taught apart from an applicant's specification and claims which actually provide the suggestion for the combination put forward by an Examiner.

The Examiner is asserting that he is only using the teachings of Sasaki to modify Aoki et al.'s printed circuit board assembly. However, it is noted that the Examiner is not permitted in this process to equate a nonconductive case surrounding a notebook PC with a nonconductive base which is substantially coextensive with a printed circuit board. In this combination, as suggested by

the Examiner, the Examiner is completely ignoring the fact that Sasaki teaches that the case surrounds all circuit components. The Examiner is not permitted to ignore this aspect from Sasaki. Documents cited in support of rejections under 35 U.S.C. § 103 must be considered for all that they teach. The clear and unequivocal teachings from Sasaki are that case 4 surrounds the components contained within a personal notebook computer device. Those of ordinary skill in the art would not make personal computer devices with half of the electrical connections, elements and structures exposed and vulnerable. This is particularly true when the personal computer device is a mobile unit such as a notebook or laptop PC. Accordingly, it is clear that what the Examiner is doing is performing a hindsight reconstruction of applicants' claimed invention based on applicants' own teachings. This is not permitted as a basis for structuring sound rejections under 35 U.S.C § 103. If one forgets for the moment that Sasaki's case completely surrounds and completely electrically isolates his electronic components, it is still nonetheless seen that the combined teachings fail to disclose a printed circuit board structure which has an electrical connector disposed along its edge. It is unequivocally clear from the teachings found in Aoki et al. that their printed circuit board 15 with its connector 17 does not include any edge connectors. There is no reason for edge connectors to be present in the structure shown in Aoki et al., since their printed circuit board does not move. Their printed circuit board is fixed with respect to their frame 61. Accordingly, there is no motivation in Aoki et al. at all to employ printed circuit board edge connectors as specifically recited as the first element of applicants' claim 1.

Attention is also worthy of being directed to the Examiner's comments with respect to applicants' claimed stiffener. In this regard, it is noted that the Examiner points to the side of cage

61 in which the board of Aoki et al. is disposed as being a stiffener which is substantially coextensive with the printed circuit board. In this regard, it is noted that the clearly recited structural language "substantially coextensive with" cannot be equated to "runs along two edges thereof." In this regard, it is noted that applicants' claimed stiffener is disposed on the printed circuit board to prevent flexure thereof. In contrast, it is noted that in the patent to Aoki et al., as a printed circuit card is inserted into connector 17, their case or cabinet does not prevent flexure of their circuit board, especially with respect to its central region. Accordingly, it is seen that the notion of flexure prevention is not a problem even remotely appreciated within the teachings of Aoki et al. Furthermore, it is seen that any stiffening provided by Aoki et al.'s cabinet structure does not have any effect on the central portions of their printed circuit board. Even if this frame acts as a stiffener, it is clearly and unequivocally not a stiffener which is coextensive with the printed circuit board. In stark contrast, this structural language is clearly found in applicants' claims. The applicants, therefore, categorically disagree with the notion that cabinet 61 in Aoki et al. is in any sense of the word coextensive with the printed circuit board. Furthermore, applicants' claims specifically recite that their stiffener is disposed on a side of the board opposite to the nonconductive base. This is clearly not the structure shown in Figures 7A or 7B of Aoki et al. Their cabinet is clearly disposed to be on the same side of the printed circuit board that receives their printed circuit cards.

The Examiner has also stated on page 3 of the above-identified Office Action that "the applicant has never claimed [sic] the claimed assembly are together as a single unit." Applicants have looked for the reference to which the Examiner refers in applicants' previously submitted response. However, applicants

can find no relevant reference therein. However, it is noted that applicants' claim is directed to an assembly of three elements which together comprise a circuit board assembly.

The Examiner also refers to what he describes as applicants' arguments concerning EMI shielding. In this regard, the Examiner indicates that the applicants have never claimed stiffeners acting as providing this shielding function. However, it is noted that metal is a well-known electromagnetic shielding mechanism. In this regard, it is noted that applicants' claim 2 specifically refers to a circuit board assembly in which the stiffener employed comprises metallic material. As such, its EMI shielding properties are inherent. There is no separate need to claim this inherent property of a metal stiffener.

The Examiner has also indicated that the applicants herein do not claim a pluggable board. In this regard, the Examiner is missing the fact that applicants' claimed circuit board assembly, because of its recited structure, is pluggable. Inherent characteristics of recited structures do not have to be separately recited in the words of the claim. The Examiner also indicates, on the top of page 4 of the Office Action referred to above, that the stiffener in Aoki et al. is substantially coextensive with the printer circuit board and is insertable/removable when it is populated with the printed circuit cards. This is clearly erroneous. There is nothing in the structure or teachings in Aoki et al. which states that frame 63 is either insertable or removable. Nor is it anywhere indicated that the circuit board is insertable or removable. It is, however, a clear and unequivocal teaching of Aoki et al. that when their circuit board is fully populated with inserted printed circuit cards, which depend upon the presence of frame 63 for insertion, that the frame could not, would not and definitely should not be removed.

In light of the comments presented above, it is clearly seen that the rejection of applicants' claims 1-6 under 35 U.S.C. § 103 is not well-founded. Accordingly, it is respectfully submitted that this rejection be withdrawn.

As a matter of formality, applicants wish to point out to the Examiner that reference numeral 134 in Figure 5H was included by mistake in the informal drawings submitted earlier. However, this error has been corrected in the formal set of drawings submitted on November 13, 2001.

For the convenience of the Examiner, it is noted that the submission of this response does not require the payment of any additional fees. Also for the convenience of the Examiner, it is noted that this response has not changed the number of claims present.

Accordingly, it is now seen that all of the applicants' claims are in condition for allowance. Therefore, early notification of the allowability of applicants' claims is earnestly solicited. Furthermore, if there are any matters which the Examiner feels could be expeditiously considered and which would forward the prosecution of the instant application, applicants' attorney wishes to indicate his willingness to engage in any telephonic communication in furtherance of this objective.

Accordingly, applicants' attorney may be reached for this purpose at the numbers provided below.

RESPECTFULLY SUBMITTED,

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DATE

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